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HEWLETT PACKARD COMPANY P O BOX 272400, 3404 E. HARMONY ROAD INTELLECTUAL PROPERTY ADMINISTRATION FORT COLLINS, CO 80527-2400			HSIEH, SHIH WEN	
			ART UNIT	PAPER NUMBER
			2861	

DATE MAILED: 06/10/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/675,534

Applicant(s)

FREDRICKSON ET AL.

Examiner

Shih-wen Hsieh

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 30 September 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-42 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-42 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>9-30-03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Objections

1. Claims 5, 25 and 35 are objected to because of the following informalities:

In regard to:

Claim 5:

Line 2, "said airflow deflecting means" was not recited in claims before. Examiner presumes it should be "air flow reducing member". Appropriate correction is required.

Claim 25:

Please change "The inkjet printing mechanism" in line 1 into "An inkjet printing mechanism" to correct a minor lack of antecedent basis problem.

Claim 35:

Line 4, lack of a "." at the end of the recitation to terminate the claim.

Double Patenting

2. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double

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patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

3. Claims 1, 3, 5, 8, 9, 11 and 13 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 1 of U.S. Patent No. 6,669,325. Although the conflicting claims are not identical, they are not patentably distinct from each other because both cases deal with a member attached to a fluid ejection device/carriage to effect air current. Below is a table of comparison between claims to show their similarities:

<u>10/675,534</u>	<u>6,669,325</u>
<p>1. A method of placing fluid droplets onto an object, the method comprising: moving a fluid ejection device including a carriage having an <u>air flow reducing member</u> and at least one fluid ejector carried by the carriage in a first direction; reducing air flow between said fluid ejection device and said object with the member leading the at least one fluid ejector; and ejecting fluid droplets onto the object.</p> <p>3. The method of claim 1, wherein: moving said fluid ejection device relative to said object in a second direction; reducing air flow between said fluid ejection device and said object with a member leading the fluid ejection device as said device moves in said second direction; and ejecting fluid droplets onto said object as said ejection device is moved in said</p>	<p>1. A method of improving performance of a fluid ejection device from which fluid droplets are projected through space onto an object, the method comprising: <u>positioning a first airflow deflecting means</u> proximate said fluid ejection device in a first direction; moving said fluid ejection device and said first deflecting means in said first direction relative to said object with said first deflecting means leading said fluid ejection device to thereby reduce airflow between said relatively moving fluid ejection device and said object; and ejecting fluid droplets onto said object, wherein said fluid ejection device is comprised of a plurality of fluid ejectors aligned in said first direction, wherein said fluid ejection device is bi-directionally moved relative to said object, and wherein the</p>

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second direction.

5. The method of claim 4, wherein said fluid ejector device includes nozzles arranged in a plane spaced from said object and said airflow deflecting means has a boundary extending in said plane perpendicular to said line.

8. A method of forming an image on media with an inkjet printing mechanism which includes an inkjet pen carriage, comprising: attaching an inkjet pen to the inkjet pen carriage; moving the inkjet pen and an airflow deflector provided by the carriage proximate said inkjet pen on said carriage in a first direction, said deflector leading said pen to thereby reduce airflow between said relatively moving pen and media; and ejecting fluid droplets onto said media as said carriage and pen are moved in said first direction.

9. The method of claim 8, wherein said airflow deflector is on said carriage.

11. The method of claim 10, wherein: said carriage is bi-directionally moved relative to said media and including positioning a second airflow deflector proximate said pens with said second deflector leading said pens during movement of said carriage in a second direction opposite to said first direction; and ejecting fluid droplets onto said media as said carriage and pens are moved in said second direction.

13. The method of claim 12, wherein said pens include nozzles arranged in a plane spaced from said media and at least one of said airflow deflectors has a boundary extending in said plane perpendicular to said line.

method further includes: positioning a second airflow deflecting means proximate said fluid ejection device with said second deflecting means leading said device during relative movement of said ejection device and said object in a second direction; and ejecting fluid droplets onto said object as said ejection device is moved in said second direction, wherein said fluid ejection device is moved in a straight scanning line, wherein said fluid ejectors include nozzles arranged in a plane spaced from said object and wherein said first airflow deflecting means has a boundary extending in said plane perpendicular to said line.

The air flow reducing member in the instant application equivalent to the air flow deflecting means in the patent ('325). Their functions are to affect air flow ahead of device's moving direction. Since a fluid ejection device moves reciprocally, therefore, the first direction and the second direction in the instant application and patent ('325) are obvious.

The others between these claims are obvious for the instant application over those in the patent ('325), such as:

said airflow deflecting means (airflow deflecting means in the patent '325) has a boundary extending in said plane perpendicular to said line, etc.

For claim 8, the air flow deflector in the instant application corresponds to the air flow deflecting means in patent ('325).

For claim 9, the carriage in the instant application can be seen as the fluid ejection device in the patent ('325).

4. Claims 6, 7, 14 and 15 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 5, 6 of U.S. Patent No. 6,669,325. Although the conflicting claims are not identical, they are not patentably distinct from each other because both cases deal with a member attached to a fluid ejection device/carriage to effect air current. Below is a table of comparison between claims to show their similarities:

<u>10/675,534</u>	<u>6,669,325</u>
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6. The method of claim 5, wherein said boundary is straight. 7. The method of claim 6, wherein said straight boundary is flat. 14. The method of claim 13, wherein said boundary is straight. 15. The method of claim 14, wherein said straight boundary is flat.	5. The method of claim 4, wherein said boundary is straight. 6. The method of claim 4, wherein said straight boundary is a flat end.
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5. Claims 16-18, 21, 22, 25-27, 30, 35 and 36 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 7 of U.S. Patent No. 6,669,325. Although the conflicting claims are not identical, they are not patentably distinct from each other because both cases deal with a member attached to a fluid ejection device/carriage to effect air current. Below is a table of comparison between claims to show their similarities:

<u>10/675,534</u>	<u>6,669,325</u>
16. An inkjet pen carriage for holding an inkjet pen, the carriage comprising: a <u>first airflow reducing member</u> configured and positioned to at least partially block flow of air between an ink ejection nozzle of a pen on said carriage and an object to be printed during carriage movement in a first direction. 17. The carriage of claim 16, further including a <u>second airflow reducing member</u> positioned to at least partially block flow of air between an ink ejection nozzle of a pen mounted on	7. An inkjet printhead carriage for holding an inkjet printhead and a <u>first airflow reducing member</u> positioned to at least partially block flow of air between an ink ejection nozzle of a printhead on said carriage and an object to be printed during carriage movement in a first direction, wherein the carriage further includes a second airflow reducing member positioned to at least partially block flow of air between an ink ejection nozzle of a printhead mounted on said carriage and said media during carriage

said carriage and said media during carriage movement in a second direction.

18. The carriage of claim 17, wherein said airflow reducing member comprises first and second deflectors 21. The carriage of claim 18, wherein said carriage defines a plurality of receptacles for holding plural inkjet pens arranged along a line of carriage movement, a first one of said deflectors being positioned at one side of said carriage and a second one of said deflectors being positioned at a second side of said carriage whereby said deflectors at least partially block airflow to said pens during reciprocal motion of said carriage.

22. The carriage of claim 21, wherein said receptacles are configured to hold pens having fluid ejection nozzles arranged in a plane and said deflectors each have a boundary extending in said plane perpendicular to said line.

25. The inkjet printing mechanism comprising: a reciprocally moveable pen carriage; an inkjet pen having an inkjet ejection nozzle and mounted on said carriage; and a first airflow deflector coupled to the carriage and positioned proximate said nozzle to at least partially block flow of air between said nozzle and media on which printing is to take place during carriage movement in a first direction.

26. The printing mechanism of claim 25, wherein said deflector is mounted on said carriage.

27. The printing mechanism of claim 26, further including a second inkjet pen having a second ink ejection nozzle on said carriage and a second airflow deflector coupled to the carriage and positioned proximate said second

movement in a second direction, wherein said first and second airflow reducing members comprise first and second deflectors, wherein said carriage defines a plurality of receptacles for holding plural inkjet printheads arranged along a line of carriage movement, a first one of said deflectors being positioned at one side of said carriage and a second one of said deflectors being positioned at a second side of said carriage whereby said deflectors at least partially block airflow to said printheads during reciprocal motion of said carriage, wherein said receptacles are configured to hold printheads having fluid ejection nozzles arranged in a plane and wherein said deflectors each has a boundary extending in said plane perpendicular to said line.

nozzle to at least partially block flow of air between said second nozzle and said media during carriage movement in a second direction.

30. The printing mechanism of claim 27, wherein said carriage defines a plurality of receptacles for holding inkjet pens arranged along a line of carriage movement, a plurality of said pens respectively mounted in said receptacles, a first one of said deflectors being positioned at one side of said carriage and a second one of said deflectors being positioned at a second side of said carriage whereby said deflectors at least partially block airflow to said pens during reciprocal motion of said carriage.

35. An inkjet carriage for holding an inkjet pen, the carriage comprising: a first means for reducing airflow positioned to at least partially block flow of air between an ink ejection nozzle of a pen on said carriage and an object to be printed during carriage movement in a first direction.

36. An inkjet printing mechanism comprising: a reciprocally moveable pen carriage; an inkjet pen having an inkjet ejection nozzle and mounted on said carriage; and a first means coupled to the carriage for deflecting and at least partially blocking flow of air between said nozzle and media on which printing is to take place during carriage movement in a first direction.

The obviousness of the subject matters and limitations of those claims above in the table in the instant application over those in claim 7 of patent ('325) are clearly

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indicated in the table above. A detail discussion similar to those given above is omitted here, since the nature of the invention was unchanged.

6. Claims 23, 24, 32 and 33 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 10 and 11 of U.S. Patent No. 6,669,325. Although the conflicting claims are not identical, they are not patentably distinct from each other because both cases deal with a member attached to a fluid ejection device/carriage to effect air current. Below is a table of comparison between claims to show their similarities:

<u>10/675,534</u>	<u>6,669,325</u>
23. The carriage of claim 22, wherein said boundary is straight. 24. The carriage of claim 23, wherein said straight boundary is a flat end. 32. The printing mechanism of claim 31, wherein said boundary is straight. 33. The printing mechanism of claim 32, wherein said straight boundary is a flat end.	10. The carriage of claim 7, wherein said boundary is straight. 11. The carriage of claim 10, wherein said straight boundary is a flat end.

7. Claims 19, 20, 28 and 29 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 8 and 9 of U.S. Patent No. 6,669,325. Although the conflicting claims are not identical, they are not patentably distinct from each other because both cases deal with a member attached to a fluid ejection device/carriage to effect air current. Below is a table of comparison between claims to show their similarities:

<u>10/675,534</u>	<u>6,669,325</u>
19. The carriage of claim 18, wherein said deflectors are integrally formed on said carriage.	8. The carriage of claim 7, wherein said deflectors are integrally formed on said carriage.
20. The carriage of claim 18, wherein wherein said deflectors are affixed to said carriage.	9. The carriage of claim 7, wherein said deflectors are affixed to said carriage.
28. The printing mechanism of claim 27, wherein said first and second deflectors are integrally formed on said carriage.	
29. The printing mechanism of claim 27, wherein said deflectors are affixed to said carriage.	

8. Claim 34 is rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 16 of U.S. Patent No. 6,669,325. Although the conflicting claims are not identical, they are not patentably distinct from each other because both cases deal with a member attached to a fluid ejection device/carriage to effect air current. Below is a table of comparison between claims to show their similarities:

<u>10/675,534</u>	<u>6,669,325</u>
34. The printing mechanism of claim 27, wherein said nozzles travel through a print zone during movement of said carriage, one of said deflectors being outside said print zone when said	16. The printing mechanism of claim 12, wherein said nozzles travel through a print zone during movement of said carriage, one of said deflectors being outside said print zone when said

carriage reaches an end of reciprocal movement.	carriage reaches an end of reciprocal movement.
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9. Claims 41 and 42 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claim 12 of U.S. Patent No. 6,669,325. Although the conflicting claims are not identical, they are not patentably distinct from each other because both cases deal with a member attached to a fluid ejection device/carriage to effect air current. Below is a table of comparison between claims to show their similarities:

<u>10/675,534</u>	<u>6,669,325</u>
<p>41. An inkjet printing mechanism comprising: a movable fluid ejection device; and an airflow deflector coupled to the fluid ejection device to at least partially block the flow of air between the fluid ejection device and media being printed upon during movement of the fluid ejection device relative to the media, wherein the air flow deflector is flexible.</p> <p>42. The printing mechanism of Claim 41, wherein the fluid ejection device includes: a carriage; and at least one fluid ejector carried by the carriage, wherein the airflow deflector is coupled to the carriage.</p>	<p>12. An inkjet printing mechanism comprising: a reciprocally moveable printhead carriage, wherein said carriage defines a plurality of receptacles for holding inkjet printheads arranged along a line of carriage movement: a first inkjet printhead having a first inkjet ejection nozzle mounted on said carriage; a first airflow deflector positioned proximate said first nozzle to at least partially block flow of air between said first nozzle and media on which printing is to take place during carriage movement in a first directions; a second inkjet printhead having a second ink ejection nozzle on said carriage; a second airflow deflector positioned proximate said second nozzle to at least partially block flow of air between said second nozzle and said media during</p>

	carriage movement in a second direction; and a plurality of said printheads respectively mounted in said receptacles, wherein a first one of said deflectors is positioned at one side of said carriage and a second one of said deflectors is positioned at a second side of said carriage, whereby said deflectors at least partially block airflow to said printheads during reciprocal motion of said carriage, wherein said nozzles are arranged in a plane and wherein said deflectors each have a straight boundary extending in said plane and comprising a flat end.
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From the table above, it can be seen that claims 41 and 42 are broadly recited than those in claim 12. However, the spirit of the invention in claims 41 and 42 still remains unchanged, with the exception that in the instant application, the air flow deflector is flexible.

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to select a known material to fabricate said deflectors, such as selecting a flexible material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use, refer to MPEP 2144.07.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

11. Claims 1-4, 6-10, 12, 14-20, 23-29, 31-33 and 35-42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tomoyuki (JP 11-001001).

In regard to:

Claim 1:

Tomoyuki teaches:

A method of placing fluid droplets onto an object, the method comprising:

moving a fluid ejection device (figs. 1-3) including a carriage having an air flow reducing member (2, figs. 1 and 2) and at least one fluid ejector carried by the carriage in a first direction;

reducing air flow between said fluid ejection device and said object with the member leading the at least one fluid ejector; and

ejecting fluid droplets (3, figs 1 and 2) onto the object (7, figs. 2 and 3), refer to Solution.

The device of Tomoyuki DIFFERS from claim 1 in that it does not teach the projection (2) is attached to a carriage, instead, the projection is attached to the recording head (equivalent the fluid ejection device).

It is well known that a recording head can not move by itself, it is generally mounted in a so-called carriage, and the carriage is moved reciprocally along a so-called main scanning axis to do its printing job by a drive source. However, the spirit of Tomoyuki's invention is the projection (2), therefore, so long as the projection (2) is disposed as shown in Tomoyuki's invention the affection to the air in the device's moving direction is achieved.

Therefore it would have been an obvious matter that so along as the projection is provided as taught by Tomoyuki, the attaching location, i. e., to the head or to the carriage will yield the same result.

Claim 2:

Tomoyuki further teaches:

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wherein said fluid ejection device comprised of a plurality of fluid ejectors, refer to figs. 1 and 2, i.e., numeral 3 indicates ink droplets are ejected from a plurality of fluid ejectors, or commonly called nozzles.

Claim 3:

wherein: moving said fluid ejection device relative to said object in a second direction; reducing air flow between said fluid ejection device and said object with a member leading the fluid ejection device as said device moves in said second direction; and ejecting fluid droplets onto said object as said ejection device is moved in said second direction.

Rejection: Please refer to the rejection to claim 1 discussed above.

Claim 4:

Tomoyuki further teaches:

wherein said fluid ejection device is bi-directionally moved in a straight scanning line, refer to fig. 1, where the hollowed arrows indicate how the device is moved, i.e., in a straight scanning line.

Claims 6 and 7:

Tomoyuki further teaches:

wherein said boundary is straight (claim 6) and flat (claim 7), refer to figs. 1 and 2, where the portion of projection 2 facing the medium is straight and flat.

Claim 8:

A method of forming an image on media with an inkjet printing mechanism which includes an inkjet pen carriage, comprising:

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attaching an inkjet pen to the inkjet pen carriage;
moving the inkjet pen and an airflow deflector provided by the carriage proximate said inkjet pen on said carriage in a first direction, said deflector leading said pen to thereby reduce airflow between said relatively moving pen and media; and
ejecting fluid droplets onto said media as said carriage and pen are moved in said first direction.

Rejection:

This claim is rejected on the basis as set forth for claim 1 discussed above.

Claim 9:

wherein said airflow deflector is on said carriage.

Rejection:

This claim is rejected on the basis as set forth for claim 1 discussed above.

Claim 10:

The method of claim 9, comprising ejecting fluid droplets from a plurality of pens on said carriage.

Rejection:

The configuration shown in Tomoyuki's figs 1 and 2 can be seen as containing a plurality of pens such as for producing a color print, in this condition, the droplets shown in Tomoyuki's figs. 1 and 2 can be included black, cyan, magenta and yellow.

Claim 12:

wherein said carriage is moved in a straight scanning line.

Rejection:

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This claim is rejected on the basis as set forth for claim 4 discussed above.

Claims 14 and 15:

wherein said boundary is straight (claim 14)/flat end(claim 15).

Rejection:

These two claims are rejected on the basis as set forth for claims 6 and 7 discussed above.

Claims 16-18:

An inkjet pen carriage for holding an inkjet pen, the carriage comprising:

a first airflow reducing member configured and positioned to at least partially block flow of air between an ink ejection nozzle of a pen on said carriage and an object to be printed during carriage movement in a first direction (claim 16).

The carriage of claim 16, further including a second airflow reducing member positioned to at least partially block flow of air between an ink ejection nozzle of a pen mounted on said carriage and said media during carriage movement in a second direction (claim 17).

The carriage of claim 17, wherein said airflow reducing member comprises first and second deflectors (claim 18).

Rejection:

These three claims were rejected on the basis as set forth for claim 1 discussed above.

Claims 19 and 20:

The device of Tomoyuki DIFFERS from claims 19 and 20 in that it does not teach:

wherein said deflectors are integrally formed on said carriage (claim 19); and
wherein said deflectors are affixed to said carriage (claim 20).

From Tomoyuki's figs. 1 and 2, one can conclude that the projections were an integral part of the device.

As to affixed to the carriage, since affixing is also a way by putting one object onto another object, its function after the affixing still remains the same.

Therefore it would have been an obvious matter that whether using as an integral part of the device or affixed to the device afterwards, the function of the projections remains the same.

Claims 23 and 24:

wherein said boundary is straight (claim 23); and
wherein said straight boundary is a flat end (claim 24).

Rejection:

These two claim are rejected on the basis as set forth for claims 6 and 7 discussed above.

Claim 25:

The inkjet printing mechanism comprising:

a reciprocally moveable pen carriage;

an inkjet pen having an inkjet ejection nozzle and mounted on said carriage; and

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a first airflow deflector coupled to the carriage and positioned proximate said nozzle to at least partially block flow of air between said nozzle and media on which printing is to take place during carriage movement in a first direction.

Rejection:

This claim is rejected on the basis as set forth for claim 1 discussed above.

Claim 26:

The printing mechanism of claim 25, wherein said deflector is mounted on said carriage.

Rejection:

This claim is rejected on the basis as set forth for claim 1 discussed above.

Claim 27:

The printing mechanism of claim 26, further including a second inkjet pen having a second ink ejection nozzle on said carriage and a second airflow deflector coupled to the carriage and positioned proximate said second nozzle to at least partially block flow of air between said second nozzle and said media during carriage movement in a second direction.

Rejection:

This claim is rejected on the basis as set forth for claim 1 discussed above.

Claims 28 and 29:

The printing mechanism of claim 27, wherein said first and second deflectors are integrally formed on said carriage (claim 28).

The printing mechanism of claim 27, wherein said deflectors are affixed to said carriage (claim 29).

Rejection:

These two claim are rejected on the basis as set forth for claims 19 and 20 discussed above.

Claim 31:

Tomoyuki further teaches:

wherein said nozzles are arranged in a plane and said deflectors each have a boundary extending in said plane, refer to figs. 1 and 2, said plane is the plane as indicated in fig. 2 by numeral 12.

Claims 32 and 33:

wherein said boundary is straight (claim 32); and

wherein said straight boundary is a flat end (claim 33).

Rejection:

These claims are rejected on the basis as set forth for claims 6 and 7 discussed above.

Claim 35:

An inkjet carriage for holding an inkjet pen, the carriage comprising:

a first means for reducing airflow positioned to at least partially block flow of air between an ink ejection nozzle of a pen on said carriage and an object to be printed during carriage movement in a first direction.

Rejection:

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First means in this claim corresponds to the projection in the Tomoyuki's invention, and is rejected on the basis as set forth for claim 1 discussed above.

Claim 36:

An inkjet printing mechanism comprising:

a reciprocally moveable pen carriage;

an inkjet pen having an inkjet ejection nozzle and mounted on said carriage; and

a first means coupled to the carriage for deflecting and at least partially blocking flow of air between said nozzle and media on which printing is to take place during carriage movement in a first direction.

Rejection:

First means in this claim corresponds to the projection in the Tomoyuki's invention, and is rejected on the basis as set forth for claim 1 discussed above.

Claim 37:

A fluid ejection device comprising:

a reciprocally moveable carriage;

at least one fluid droplet ejector mounted on said carriage;

a support for an object onto which fluid droplets are to be ejected; and

a deflector coupled to the carriage for deflecting airflow away from a trajectory of fluid droplets ejected from said ejector toward an object on said support.

Rejection:

This claim is rejected on the basis as set forth for claim 1 discussed above.

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A support for an object onto which fluid droplets are to be ejected in this claim is an object, which is disposed under the recording medium (7), and is generally called a platen. Although not explicitly taught by Tomoyuki, however, one of ordinary skill in the art will understand that a platen used to support a printing medium is an essential element in an inkjet printer or fluid ejection device, refer to MPEP 2144.03, In re Malcolm, 129 F.2d 529, 54 USPQ 235 (CCPA 1942).

Claim 38:

The fluid ejection device of claim 37, further comprising a second deflector coupled to the carriage for deflecting airflow away from said trajectory, said deflectors being positioned on said carriage relative to said ejector to lead said ejector during each direction of movement of said carriage.

Rejection:

This claim is rejected on the basis as set forth for claim 37 discussed above.

Claim 39:

Tomoyuki further teaches:

wherein said deflectors have boundaries which extend parallel to said support, refer to figs. 1 and 2, said boundary is represented by numeral 12 in fig. 2.

Claim 40:

The device of Tomoyuki DIFFERS from claim 40 in that it does not teach:

wherein said deflectors are flexible.

Therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to select a known material to fabricate said

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deflectors, such as selecting a flexible material, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use, refer to MPEP 2144.07.

Claim 41:

An inkjet printing mechanism comprising:

a movable fluid ejection device; and

an airflow deflector coupled to the fluid ejection device to at least partially block the flow of air between the fluid ejection device and media being printed upon during movement of the fluid ejection device relative to the media,

wherein the air flow deflector is flexible.

Rejection:

This claim is rejected on the basis as set forth for claims 37 and 40 discussed above.

Claim 42:

The printing mechanism of claim 41, wherein the fluid ejection device includes:

a carriage; and

at least one fluid ejector carried by the carriage, wherein the airflow deflector is coupled to the carriage.

Rejection:

This claim is rejected on the basis as set forth for claim 1 and 41 discussed above.


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12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-wen Hsieh whose telephone number is 571-272-2256. The examiner can normally be reached on 7:30AM -5:00PM.

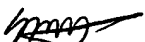
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dave Talbott can be reached on 571-272-1934. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

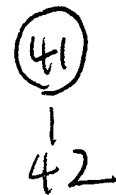
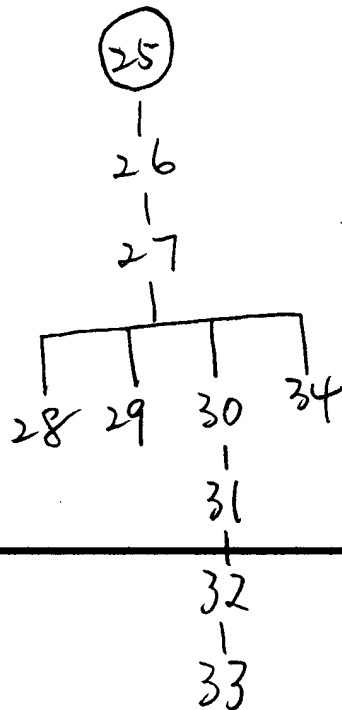
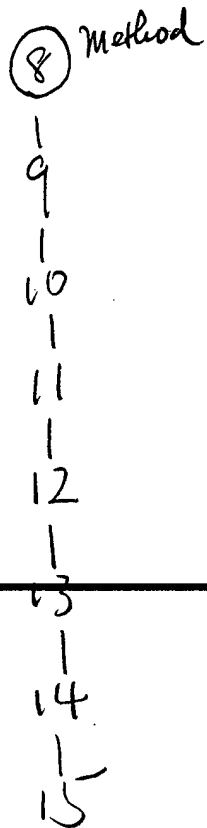
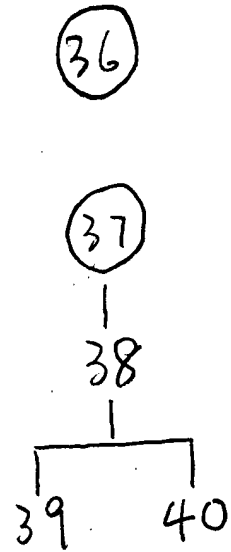
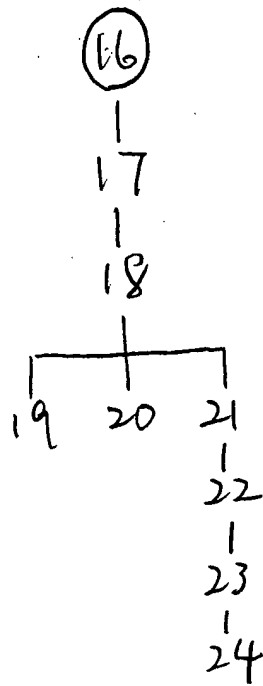
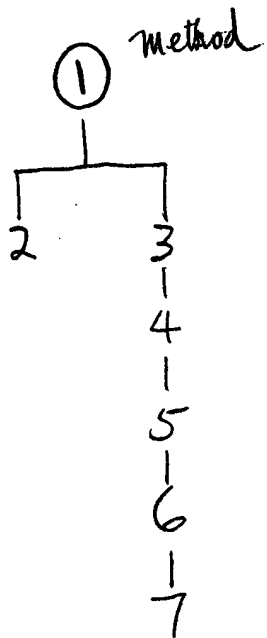
SHIH-WEN HSIEH
PRIMARY EXAMINER


Shih-wen Hsieh
Primary Examiner
Art Unit 2861

SWH


June 8, 2005

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